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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/600,764

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Eddy Lambert

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EXAMINER

COLE, ELIZABETH M

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

02/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/600,764 | Applicant(s) LAMBERT ET AL. | |
| | Examiner Elizabeth M. Cole | Art Unit 1794 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-31,33-35,38-46,51-55 and 57 is/are pending in the application.
- 4a) Of the above claim(s) 21-31,34,38 and 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-20,33,35,39,40,42-46,51,52,54,55 and 57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 13-31, 33-34, 38-46, 51-55, 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dewaegheneire et al, WO 97/04152, in view of Hunter et al, U.S. Patent NO. 4,214,867, EP 0268146 and Krupnik et al, U.S. Patent No. 6,298,538. Dewaegheneire discloses a burner fabric comprising machined metal filaments which may comprise a high temperature alloy, such as alloys of iron, chromium and yttrium. See page 3, lines 20-32. The fibers can be formed into fabrics which are used as burner membranes. See page 4, lines 20-36. . The fabrics are useful as burner membranes without having to be sintered and have an advantage over sintered membranes because the unsintered membranes are more pliable and because they heat up much more rapidly. See page 6, line 31 – page 7, line 16. The fibers are made by shaving, (see page 1, lines 8-17; page 5, lines 7-10. Dewaegheneire differs from the claimed invention because it does not teach employing nonwoven fabrics but instead teaches knitted fabrics, does not teach needling. Hunter et al teaches that both knitted and nonwoven fabrics can be used to make burner membranes. See col. 2, lines 51-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a nonwoven rather than knitted fabric in the invention of Dewaegheneire, motivated by the teaching of Hunter that both types of

fabrics were recognized in the art as being suitable for use as burner membranes. With regard to the needling, Krupnik teaches that needling nonwoven webs formed from metal fibers such as stainless steel fibers produces a stronger product. See abstract. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have needled the web of Dewaegheneire, in order to produce a stronger fabric. With regard to the particular porosity claimed, since needling is known in the art as a method by which the density and porosity of a nonwoven can be adjusted and controlled, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the degree of needling through the process of routine experimentation in order to arrive at a fabric having the desired porosity.

3. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over . Dewaegheneire et al, WO 97/04152, in view of Hunter et al, U.S. Patent NO. 4,214,867 and Krupnik et al, U.S. Patent No. 6,298,538 as applied to claims above, and further in view of DeBruyne et al, U.S. Patent No. 5,088,919. Dewaegheneire does not disclose coating the fibers with a coating that activates the oxidation of the burner fuel mixture. De Bruyne et al teaches that the fibers can be coated with a material which activates the oxidation of the burner fuel mixture. See col. 4, lines 35-49. It would have been obvious to one of ordinary skill in the art to have coated the fibers of Dewaegheneire with the coating of De Bruyne et al, motivated by the expectation that this would enhance the heat resistance of the fibers.

4. Applicant's arguments filed 12/3/07 have been fully considered but they are not persuasive. Applicant's arguments and the attachments have overcome the 112 1st paragraph rejections

5. With regard to the art rejections, Applicant argues that the claims require that the porosity be achieved by the compression step rather than by needling. However, the instant claims are drawn to a product. The combination of references would suggest needling the burner membrane. Needling is a well known method of densifying a nonwoven fabric. The claims do recite that the porosity is present due to compaction, however, since the claims are process claims, the burden is on Applicant to show that the difference in the process, (i.e., compacting to a particular density versus needling to a particular density), would result in an unobvious difference between the claimed product and the prior art product.

6. Applicant argues that the person of ordinary skill in the art would have had the skill to predict that a needled and compacted stainless steel fiber web would have the required coherence to function as a burner membrane. However, while it is noted that the membrane of Dewaegheneire is not in the form of a nonwoven but in the form of a knitted fabric, Hunter et al teaches that both knitted and nonwoven fabrics can be used to make burner membranes. See col. 2, lines 51-52. Therefore, the person of ordinary skill in the art would have had a reasonable expectation that the advantages of employing a non-sintered burner membrane taught by Dewaegheneire, (greater pliability and more rapid heating), could also be achieved in other known textile burner structures, such as nonwoven fabrics.

7. Applicant requests that a reference be produced to establish that needling was a known method of controlling and adjusting the density and porosity of a nonwoven web. The Krupnik reference, (US 6,298,538), teaches that needling of the lapped carded fiber web increases the density of the web, (see abstract, col. 3, lines 44-67). Further, by definition, needlepunching is a process which densifies a batt. See, for example, the Wellington Sears Handbook of Industrial Textiles, p. 148, published 1995, which describes needlepunching as process which increases the density of a web.

8. Applicant argues that the motivation of a knitted fabric with a nonwoven fabric for the purpose of increasing strength is not consistent with the common sense of the ordinary artisan. However, the action sets forth evidence that both knitted and nonwoven fabrics were known to be useful as burner membranes, (as taught by Hunter). Therefore, the use of one known equivalent material in place of another would have been obvious to the person of ordinary skill in the art even without an express suggestion of the desirability of substituting one with another. With regard to needling, Krupnik teaches that needling improves the strength and density of the burner membrane, and therefore provides a reason for the person of ordinary skill to needle the nonwoven burner membrane.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

Mr. Terrel Morris, the examiner's supervisor, may be reached at (571) 272-1478.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1794

e.m.c